

AMENDMENTS TO THE CLAIMS

Please cancel Claims 1-16.

LISTING OF CLAIMS

1.-16. (cancelled)

17. (original) A cooling apparatus boiling and condensing refrigerant, having a refrigerant tank portion having a heat generating element mounted on a surface thereof and adapted to store therein a refrigerant and a heat exchanging portion for executing heat exchange between said refrigerant that boils by receiving heat from said heat generating element and a cooling medium and constructed, as a whole, by stacking a number of plate-like members, wherein

said heat exchanging portion is constructed by alternately stacking said first plate-like members having first openings that form part of refrigerant passages to communicate with an internal space in said refrigerant tank portion and second openings that form part of cooling passages and said second plate-like members having at least said first openings, said second plate-like member being set to be thinner than said first plate-like member so as to have a function as a fin.

18. (original) A cooling apparatus boiling and condensing refrigerant as set forth in Claim 17, wherein said second plate-like member has a communication port which communicates with said second opening formed in said first plate-like member.

19. (original) A cooling apparatus boiling and condensing refrigerant as set forth in Claim 18, wherein said second opening in said first plate-like member is

provided in such a manner as to be divided into a second opening portion and another second opening portion with a pillar portion being left therebetween, and wherein

said communication port formed in said second plate-like member is adapted to communicate with both said second opening portion and said other second opening portion.

20. (original) A cooling apparatus boiling and condensing refrigerant as set forth in Claim 17, wherein a sacrificial material is affixed to one or both sides of at least either of said first plate-like member and said second plate-like member which are both made of a metal.

21. (original) A cooling apparatus boiling and condensing refrigerant as set forth in Claim 17, wherein said second plate-like member has a plurality of cut and erected pieces which are provided in such a manner as to be cut and erected from the surface thereof, and wherein said cut and erected pieces protrude into said second opening formed in said first plate-like member.

22. (original) A cooling apparatus boiling and condensing refrigerant as set forth in Claim 17, wherein said second plate-like member is provided such that the surface of said second plate-like member becomes irregular within said second opening formed in said first plate-like member.

23. (original) A cooling apparatus boiling and condensing refrigerant as set forth in Claim 17, wherein said first openings formed in said plurality of plate-like members that are used for said heat exchanging portion are adapted to communicate with one another to form refrigerant passages that communicate with said refrigerant tank portion, and wherein barrier wall portions are provided in said refrigerant passages for disturbing the flow of said refrigerant.

24. (original) A cooling apparatus boiling and condensing refrigerant as set forth in Claim 17, wherein said cooling medium is a liquid such as water.

25. (original) A cooling apparatus boiling and condensing refrigerant, having a refrigerant tank portion having a heat generating element mounted on a surface thereof and adapted to store therein a refrigerant, a refrigerant diffusing portion for diffusing said refrigerant that boils by receiving heat from said heat generating element and a heat exchanging portion provided between said refrigerant tank portion and said refrigerant diffusing portion for executing a heat exchange between said boiling refrigerant and a cooling medium and constructed, as a whole, by stacking a number of plate-like members, wherein

said heat exchanging portion is constructed by alternately stacking said first plate-like members having first openings that form part of refrigerant passages to communicate with internal spaces in said refrigerant tank portion and said refrigerant diffusing portion, and second openings that form part of cooling passages and said second plate-like members having at least said first openings, said second plate-like

member being set to be thinner than said first plate-like member so as to have a function as a fin.

26. (original) A cooling apparatus boiling and condensing refrigerant as set forth in Claim 25, wherein said second plate-like member has a communication port which communicates with said second opening formed in said first plate-like member.

27. (original) A cooling apparatus boiling and condensing refrigerant as set forth in Claim 26, wherein said second opening in said first plate-like member is provided in such a manner as to be divided into a second opening portion and another second opening portion with a pillar portion being left therebetween, and wherein

said communication port formed in said second plate-like member is adapted to communicate with both said second opening portion and said other second opening portion.

28. (original) A cooling apparatus boiling and condensing refrigerant as set forth in Claim 25, wherein a sacrificial material is affixed to one or both sides of at least either of said first plate-like member and said second plate-like member which are both made of a metal.

29. (original) A cooling apparatus boiling and condensing refrigerant as set forth in Claim 25, wherein said second-plate like member has a plurality of cut and erected pieces which are provided in such a manner as to be cut and erected from the

surface thereof, and wherein said cut and erected pieces protrude into said second opening formed in said first plate-like member.

30. (original) A cooling apparatus boiling and condensing refrigerant as set forth in Claim 25, wherein said second plate-like member is provided such that the surface of said second plate-like member becomes irregular within said second opening formed in said first plate-like member.

31. (original) A cooling apparatus boiling and condensing refrigerant as set forth in Claim 25, wherein said first openings formed in said plurality of plate-like members that are used for said heat exchanging portion are adapted to communicate with one another to form refrigerant passages that communicate with said refrigerant tank portion, and wherein barrier wall portions are provided in said refrigerant passages for disturbing the flow of said refrigerant.

32. (original) A cooling apparatus boiling and condensing refrigerant as set forth in Claim 25, wherein said cooling medium is a liquid such as water.